

Remarks/Arguments:

Applicants thank the Examiner and his Supervisor for the courtesy of the January 21, 2009 telephone interview. A summary of the interview is set forth in the remarks below.

Claim Rejections Under 35 U.S.C. §102 and §103

Claims 17-19, 21, 24 and 27 stand rejected under 35 U.S.C. §103 as unpatentable over U.S. Publication No. 2001/0030471 (Kanebako). Claim 20 stands rejected as unpatentable over Kanebako in view of U.S. Patent No. 5,986,376 (Werson). Claim 22 stands rejected as unpatentable over Kanebako in view of U.S. Publication No. 2002/0109422 (Hatton). Claim 23 stands rejected as unpatentable over Kanebako in view of Russian Publication No. RU2159282C2 (Tumchenok). Claim 25 stands rejected as unpatentable over Kanebako in view of U.S. Patent No. 6,786,069 (Ochi). Claim 26 stands rejected as unpatentable over Kanebako in view of U.S. Publication No. 2003/0173837 (Fujigaki et al.). Claim 28 stands rejected as unpatentable over Kanebako in view of U.S. Publication No. 2003/0123375 (Uno et al.). Claim 29 stands rejected as unpatentable over Kanebako in view of U.S. Patent No. 6,397,441 (Passini et al.). Claim 30 stands rejected as unpatentable over Kanebako in view of U.S. Patent No. 4,863,421 (Loebach). Claims 31, 32, 35 and 36 stand rejected as unpatentable over Kanebako in view of U.S. Patent No. 4,930,415 (Hara et al.). Claim 33 stands rejected as unpatentable over Kanebako in view of Hara further in view of U.S. Patent No. 6,424,114 (Komatsu). Claim 34 stands rejected as unpatentable over Kanebako in view of U.S. Patent No. 5,950,538 (Puschnerat). Applicants traverse these rejections.

"To establish a prima facie case of obviousness, ... the prior art reference (or references when combined) must teach or suggest all the claim limitations." M.P.E.P. §2143. Additionally, as set forth by the Supreme Court in KSR Int'l Co. v. Teleflex, Inc., No. 04-1350 (U.S. Apr. 30, 2007), it is necessary to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the prior art elements in the manner claimed.

Independent claim 17 recites "[a] rotation body for a printing machine, comprising: a stator including at least one stator winding; and a rotor including at least one permanent magnet and positioned for rotation relative to the stator, the rotor supported by a pair of spaced apart bearings and the at least one permanent magnet provided over substantially all of the area along the longitudinal axis of the rotor between the bearings, wherein current flowing through the stator winding interacts with the at least one permanent magnet and generates a torque acting on the rotor."

With the claimed configuration, the torque is generated uniformly over the length of the rotor between the bearings and minimizes stress that may be generated by torque acting only on a part of the rotor.

The Office Action cites to Figure 1 of Kanebako as teaching a rotor 2a and stator 3a. Kanebako explains in paragraph [0034] that the rotor thereof comprises more than rotor 2a. "The rotors 2a and 2b are formed from main body sections composed of a magnetic material, and provided on a rotor shaft 8 composed of a magnetic material at locations spaced a specified distance from one another. The main body sections forming the rotors 2a and 2b and the rotor shaft 8 are both formed from a magnetic material. Therefore, the main body sections composing the rotors 2a and 2b also define part of the rotor shaft 8." (emphasis added).

With respect to bearings for the rotor/rotor shaft 2a, 2b, 8 of Figures 1 and 2, Kanebako explains in paragraph [0035] that "[f]irst stator windings 5a and 5b are wound around the stators 3a and 3b, respectively, to generate two-pole levitation control magnetic fluxes IF to controllably levitate the rotors 2a and 2b." Accordingly, a magnetic bearing is provided between each stator portion 3a, 3b and a respective rotor portion 2a, 2b.

As shown in Figure 2 of Kanebako and explained in paragraph [0034], "[a]mong the rotors 2a and 2b, the plural permanent magnets 7 are disposed around a peripheral surface of the rotor 2a in a manner that their magnetic polarities are alternately inverted (i.e., N, S, N, S, . . .) along a direction of the periphery of the rotor 2a." (emphasis added). The permanent magnets are not provided over substantially all of the area along the longitudinal axis of the rotor between the bearings as recited in claim 17, but instead only over a portion of the rotor, namely, rotor 2a, which may generate stress due to an uneven torque.

With respect to the embodiment illustrated in Figures 11 and 12 of Kanebako, the rotor body 50 is supported by roller bearings at each end thereof (see Figure 11). Permanent magnets 33 and 34 cover only a small portion of the roller body 50 between these roller bearings. Again, such an arrangement may generate stress on the rotor body due to uneven torque.

In response to such, the Office Action cites to Kanebako paragraph 36 as teaching that as many magnets as necessary may be used. However, as explained during the interview, the magnets P discussed in paragraph 36 are the magnets on the stator 3a, 3b as shown in Fig. 2 of Kanebako. As further shown in Fig. 2, Kanebako only contemplates magnets 7 on a small portion of the rotor 2a.

Upon explanation of such during the interview, the examiner acknowledged the shortcomings of Kanebako and indicated that the current rejections will be withdrawn. It was further indicated that if any further art was identified, that such art would be cited in a non-final action.

It is respectfully submitted that Kanebako fails to teach or suggest each limitation of the claimed invention. The remaining cited references do not overcome the shortcomings of Kanebako.

It is respectfully submitted that independent claim 17 is in condition for allowance. Claims 18-35 each depend from claim 17 and are therefore allowable for at least their dependency on allowable claim 17.

Similar to independent claim 17, independent claim 36 recites "[a] method of driving a cylinder or roller of a printing machine, the method comprising: providing at least one rotation body comprising: a stator supported by the printing machine and including at least one stator winding; and a rotor including at least one permanent magnet and positioned for rotation relative to the stator, the rotor supported by a pair of spaced apart bearings and the at least one permanent magnet provided over substantially all of the area along the longitudinal axis of the rotor between the bearings; positioning the cylinder or roller about the rotor; and selectively providing current through the stator winding."

As explained above and acknowledged by the Examiner, Kanebako does not teach or suggest a rotor supported by a pair of spaced apart bearings and at least one permanent magnet provided over substantially all of the area along the longitudinal axis of the rotor between the bearings. It is respectfully submitted that independent claim 36 is in condition for allowance.

It is respectfully submitted that each of the pending claims is in condition for allowance. Early reconsideration and allowance of each of the pending claims are respectfully requested.

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If the Examiner believes an interview, either personal or telephonic, will advance the prosecution of this matter, the Examiner is invited to contact the undersigned to arrange the same.

Respectfully submitted,



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